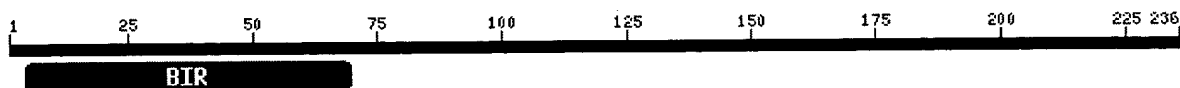


Query= [gi|16902898|gb|AAL30369.1|AF420440.1](#) testis-specific
inhibitor of apoptosis [Homo sapiens]
(236 letters)

Database: cdd.v.1.62

Click on boxes for multiple alignments



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Domain Relatives

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Domains in Entrez

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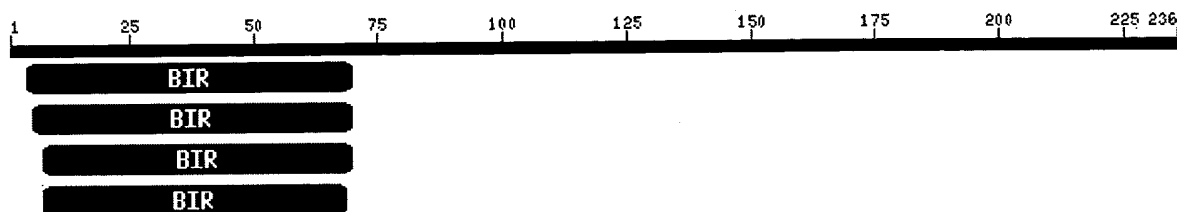
Details

RPS-BLAST 2.2.6 [Apr-09-2003]

Query= gi|16902898|gb|AAL30369.1|AF420440.1 testis-specific
inhibitor of apoptosis [Homo sapiens]
(236 letters)

Database: #cdd.v1.62
11,088 PSSMs; 2,717,223 total columns

Click on boxes for multiple alignments



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Domain Relatives

- .. This CD alignment includes 3D structure. To display structure, download [Cn3D!](#)

PSSMs producing significant alignments:

| | | Score (bits) | E value |
|---------------|---|-----------------|------------|
| gnl CDD 14931 | smart00238, BIR, Baculoviral inhibition of apoptosis protein r... | 94.2 | 1e-20 |
| gnl CDD 17763 | cd00022, BIR, Baculoviral inhibition of apoptosis protein repe... | 92.6 | 4e-20 |
| gnl CDD 1211 | pfam00653, BIR, Inhibitor of Apoptosis domain. BIR stands for ... | 90.7 | 1e-19 |
| gnl CDD 3661 | LOAD_bir, BIR, Zn binding domain involved in protein protein i... | 88.0 | 9e-19 |

- gnl|CDD|14931, smart00238, BIR, Baculoviral inhibition of apoptosis protein repeat; Domain found in inhibitor of apoptosis proteins (IAPs) and other proteins. Acts as a direct inhibitor of caspase enzymes.

CD-Length = 72 residues, 95.8% aligned
Score = 94.2 bits (234), Expect = 1e-20

Query: 4 YEARLITFGTWY--SVNKEQLARAGFYAIGQEDKVQCFHCGGLANWPKEDPWEQHAK 61
Sbjct: 3 EEARLKTFFQNWFPYNSKLTPEKLAKAGFYITGVGDEVKCFFCGGELDNWEPGDDPWEEHKK 62

Query: 62 WYPGCKYLL 70
Sbjct: 63 WSPNCPFVR 71

- gnl|CDD|17763, cd00022, BIR, Baculoviral inhibition of apoptosis protein repeat domain; Found in inhibitors of apoptosis proteins (IAPs) and other proteins. In higher eukaryotes, BIR domains inhibit apoptosis by acting as direct inhibitors of the caspase family of protease enzymes. In yeast, BIR domains are involved in regulating cytokinesis. This novel fold is stabilized by zinc tetrahedrally coordinated by one histidine and three cysteine residues and resembles a classical zinc finger.

CD-Length = 69 residues, 98.6% aligned
Score = 92.6 bits (230), Expect = 4e-20

Query: 5 EARLITFGTW--MYSVNKEQLARAGFYAIGQEDKVQCFHCGGLANWPKEDPWEQHAKW 62
Sbjct: 1 EARLKTFFKNWFPISLKVTPPEKLAEAGFYITGRGDEVKCFFCGLELKNWEPGDDPWEEHKKRW 60

Query: 63 YPGCKYLL 70
Sbjct: 61 SPNCPFVL 68

- [gn||CDD|1211](#), pfam00653, BIR, Inhibitor of Apoptosis domain. BIR stands for 'Baculovirus Inhibitor of apoptosis protein Repeat' Also known as IAP repeat.

CD-Length = 66 residues, 100.0% aligned
Score = 90.7 bits (225), Expect = 1e-19

Query: 7 RLITFGTWMYSV--NKEQLARAGFYAIGQEDKVQCFHCGGGLANWKPKEDPWEQHAKWYP 64
Sbjct: 1 RLRTFQNWPIISNLQFPEQLAKAGFYITGVGDEVRCFFCGVELKNWEPGDDPWEEHKRWSP 60

Query: 65 GCKYLL 70
Sbjct: 61 NCPFVR 66

- [gn||CDD|3661](#), LOAD_bir, BIR, Zn binding domain involved in protein protein interactions in caspase inhibition and spindle assembly.

CD-Length = 65 residues, 100.0% aligned
Score = 88.0 bits (218), Expect = 9e-19

Query: 7 RLITFGTWMYSVNK--EQLARAGFYAIGQEDKVQCFHCGGGLANWKPKEDPWEQHAKWYP 64
Sbjct: 1 RLKTFQNWPNASLNLVPEKLARAGFYITGRGDEVRCFFCGGVLENWEPGDDPWEEHARWSP 60

Query: 65 GCKYL 69
Sbjct: 61 NCPFV 65

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CD: [smart00238.7](#), BIR, Query added

PSSM-Id: 14931

Source: [Smart](#)

Description: Baculoviral inhibition of apoptosis protein repeat; Domain found in inhibitor of apoptosis proteins (IAPs) and other proteins. Acts as a direct inhibitor of caspase enzymes.

Taxa: [root](#)

References: [60 Pubmed Links](#)

Related: [pfam00653](#), [cd00022](#), [LOAD_bir](#)

Status: Alignment from source

Created: 4-Feb-2003

Aligned: 30 rows

PSSM: 72 columns

Representative: Consensus

Proteins: [\[Click here for CDART summary of Proteins containing smart00238\]](#)

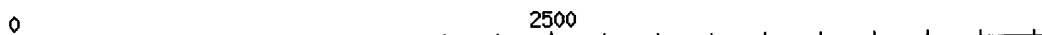
[View 3D Structure](#) with [Cn3D](#) using [Virtual Bonds](#) (To display structure, download [Cn3D](#))

[View Alignment](#) as [Hypertext](#) width [60](#) color at [2.0 bits](#)

[Subset Rows](#) [up to 10](#) sequences most similar to the query

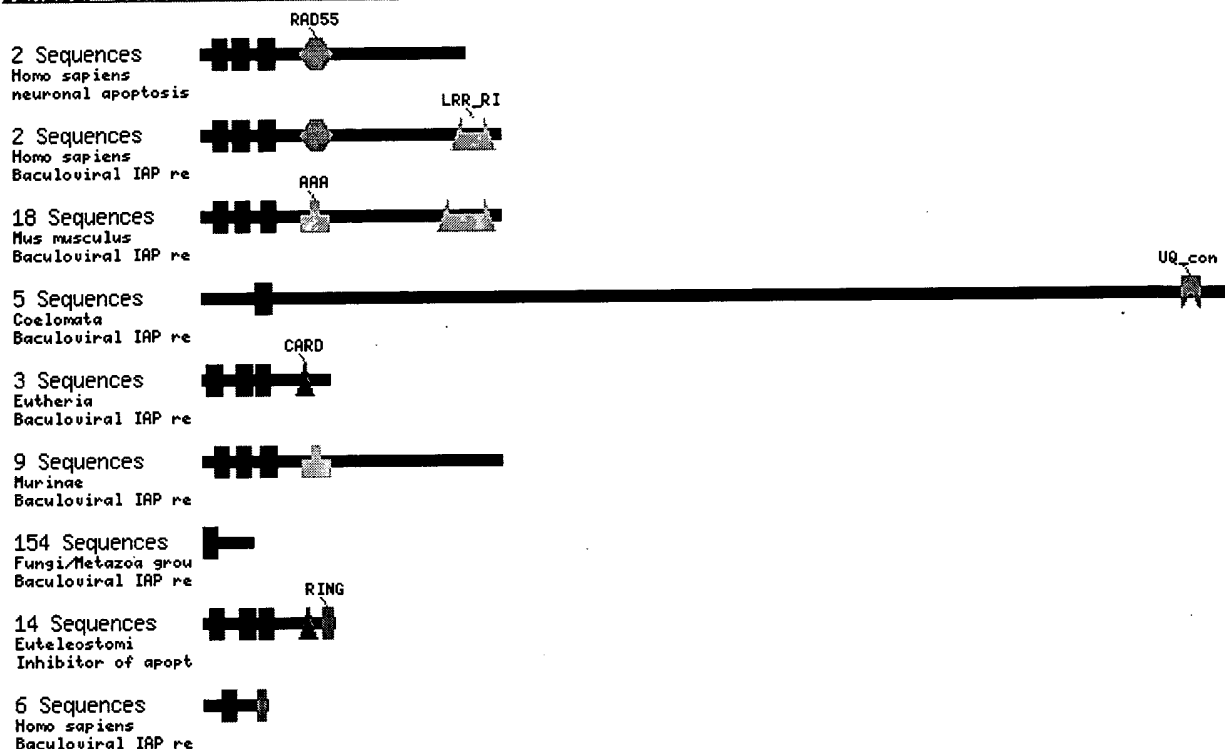
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| query | 2 | 3 | 4 | 5 | 6 | 7 |
| 1E31 B | 13 | 14 | 15 | 16 | 17 | 18 |
| 1JD5 A | 24 | 25 | 26 | 27 | 28 | 29 |
| 1G73 D | 26 | 27 | 28 | 29 | 30 | 31 |
| 1I40 C | 42 | 43 | 44 | 45 | 46 | 47 |
| 1QBH A | 5 | 6 | 7 | 8 | 9 | 10 |
| qi 2497244 | 210 | 211 | 212 | 213 | 214 | 215 |
| qi 2497236 | 27 | 28 | 29 | 30 | 31 | 32 |
| qi 2497236 | 167 | 168 | 169 | 170 | 171 | 172 |

| | 70 | 80 | 90 | 100 | 110 | 120 |
|----------------------------|-----|-----|-----|-----|-----|-----|
| consensus | 56 | 57 | 58 | 59 | 60 | 61 |
| query | 55 | 56 | 57 | 58 | 59 | 60 |
| 1E31 B | 73 | 74 | 75 | 76 | 77 | 78 |
| 1JD5 A | 79 | 80 | 81 | 82 | 83 | 84 |
| 1G73 D | 79 | 80 | 81 | 82 | 83 | 84 |
| 1I40 C | 97 | 98 | 99 | 100 | 101 | 102 |
| 1QBH A | 60 | 61 | 62 | 63 | 64 | 65 |
| qi 2497244 | 265 | 266 | 267 | 268 | 269 | 270 |
| qi 2497236 | 82 | 83 | 84 | 85 | 86 | 87 |
| qi 2497236 | 221 | 222 | 223 | 224 | 225 | 226 |



Query 








Similar domain architectures

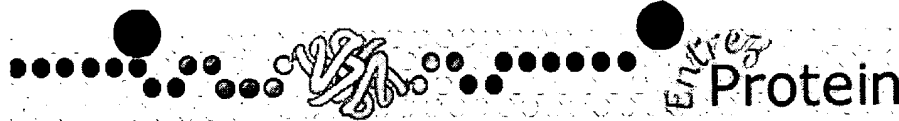


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Subset by Taxonomy

Subset by selected domains:

- ☐  **COG0467** RecA-superfamily ATPases implicated in signal tra...
includes: [pfam00154](#) [pfam03796](#) [COG0305](#) [COG0468](#) [COG2874](#)
- ☐  **cd00162** RING-finger (Really Interesting New Gene) domain,...
includes: [smart00504](#) [smart00184](#) [COG5194](#) [pfam00097](#) [pfam04564](#)
- ☐  **smart00238** Baculoviral inhibition of apoptosis protein repea...
includes: [pfam00653](#) [LOAD_bir](#) [cd00022](#)
- ☐  **pfam00179** Ubiquitin-conjugating enzyme. Proteins destined f...
includes: [cd00195](#) [COG5078](#) [smart00212](#)
- ☐  **cd00116** Leucine-rich repeats (LRRs), ribonuclease inhibit...
includes: [COG5238](#)
- ☐  **pfam00619** Caspase recruitment domain. Motif contained in pr...
includes: [smart00114](#)
- ☐  **cd00009** AAA-superfamily of ATPases associated with a wide...
includes: [pfam01695](#) [cd00267](#) [pfam00158](#) [pfam03308](#) [smart00350](#) [pfam00308](#) [pfam01078](#) [pfam01495](#) [pfam03205](#) [smart0](#) [COG0396](#) [COG0410](#) [COG0411](#) [COG0444](#) [COG0470](#) [COG0523](#) [COG0541](#) [COG0552](#) [COG0714](#) [COG1101](#) [COG1117](#) [COG1118](#) [COG1119](#) [COG1120](#) [COG1121](#) [COG1122](#) [COG1124](#) [COG1125](#) [COG1126](#) [COG1127](#) [COG1134](#) [COG1135](#) [COG1136](#) [COG1137](#) [COG1221](#) [COG1222](#) [COG1223](#) [COG1466](#) [COG1474](#) [COG1485](#) [COG2842](#) [COG2884](#) [COG3172](#) [COG3267](#) [COG3283](#) [COG3604](#) [COG3638](#) [COG3839](#) [COG3840](#) [COG3842](#) [CO](#)



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☐ 1: AAO31297. Sequence 2 from p...[gi:28075569]

BLink, Links

LOCUS AAO31297 236 aa linear PAT 29-JAN-2003

DEFINITION Sequence 2 from patent US 6331412.

ACCESSION AAO31297

VERSION AAO31297.1 GI:28075569

DBSOURCE accession AAO31297.1

KEYWORDS .

SOURCE Unknown.

ORGANISM Unknown.

Unclassified.

REFERENCE 1 (residues 1 to 236)

AUTHORS Korneluk, R.G. and Lagace, M.

TITLE Methods and compounds for modulating male fertility

JOURNAL Patent: US 6331412-A 2 18-DEC-2001;

FEATURES Location/Qualifiers

source 1..236

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☐ 1: AAL30369. testis-specific i...[gi:16902898]

BLink, Domains, Links

LOCUS AAL30369 236 aa linear PRI 11-NOV-2001
DEFINITION testis-specific inhibitor of apoptosis [Homo sapiens].
ACCESSION AAL30369
VERSION AAL30369.1 GI:16902898
DBSOURCE locus AF420440 accession AF420440.1
KEYWORDS .
SOURCE Homo sapiens (human)
ORGANISM Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (residues 1 to 236)
AUTHORS Korneluk, R.G. and Lagace, M.C.
TITLE Genomic Organization of the X-linked Inhibitor of Apoptosis and
Identification of a Novel Testis-Specific Transcript
JOURNAL Unpublished
REFERENCE 2 (~~residues 1 to 236~~)
AUTHORS Korneluk, R.G. and Lagace, M.C.
TITLE Direct-Submission
JOURNAL Submitted (18-SEP-2001) Research Institute, Children's Hospital of
Eastern Ontario, 401 Smyth Rd., Ottawa, Ontario K1H 8L1, Canada
COMMENT Method: conceptual translation supplied by author.
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BIRC4/XIAP"
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☐ 1: AB013819. *Mus musculus* mRNA...[gi:3135206]

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LOCUS      AB013819                955 bp    mRNA    linear    ROD 25-FEB-1999
DEFINITION Mus musculus mRNA for TIAP, complete cds.
ACCESSION  AB013819
VERSION    AB013819.1  GI:3135206
KEYWORDS   TIAP.
SOURCE     Mus musculus (house mouse)
           ORGANISM  Mus musculus

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REFERENCE      1 (sites)
AUTHORS        Kobayashi,K., Hatano,M., Otaki,M., Ogasawara,T. and Tokuhisa,T.
TITLE          Expression of a murine homologue of the inhibitor of apoptosis
                protein is related to cell proliferation
JOURNAL        Proc. Natl. Acad. Sci. U.S.A. 96 (4), 1457-1462 (1999)
MEDLINE        99145571
PUBMED         9990045
REFERENCE      2 (bases 1 to 955)
AUTHORS        Kobayashi,K., Otaki,M., Ogasawara,T. and Tokuhisa,T.
TITLE          Direct Submission
JOURNAL        Submitted (11-MAY-1998) Koichi Kobayashi, Chiba University Graduate
                School of Medicine, Department of Developmental Genetics; Inohana
                1-8-1, Chuo-ku, Chiba 260-8670, Japan
                (E-mail:Kobavashi@devgen01.m.chiba-u.ac.jp, Tel:81-43-226-2182)

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COMMENT      Sequence updated (15-May-1998).
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| | 121 gcgctgcccc | agatctggca | gctgtacctc | aagaactacc | gcctcgccac | cttcaagaac |
| | 181 tggcccttcc | tggaggactg | cgctgcacc | ccagagcgaa | tggcggaggc | tggcttcac |
| | 241 cactgcctta | ccgagaacga | gctcgatttg | gcccagtggt | ttttctgctt | taaggaattg |
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VAST Search
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Research
Structure Group research projects

☐ 1: [smart00238](#)

Links

BIR: Baculoviral inhibition of apoptosis protein repeat; Domain found in inhibitor of apoptosis proteins (IAPs) and other proteins. Acts as a direct inhibitor of caspase enzymes. [smart00238|14931]

☐ 2: [pfam00653](#)

Links

BIR: Inhibitor of Apoptosis domain. BIR stands for 'Baculovirus Inhibitor of apoptosis protein Repeat' Also known as IAP repeat. [pfam00653|1211]

☐ 3: [cd00022](#)

Links

BIR: Baculoviral inhibition of apoptosis protein repeat domain; Found in inhibitors of apoptosis proteins (IAPs) and other proteins. In higher eukaryotes, BIR domains inhibit apoptosis by acting as direct inhibitors of the caspase family of protease enzymes. In yeast, BIR domains are involved in regulating cytokinesis. This novel fold is stabilized by zinc tetrahedrally coordinated by one histidine and three cysteine residues and resembles a classical zinc finger. [cd00022|17763]

☐ 4: [LOAD_bir](#)

Links

BIR: Zn binding domain involved in protein protein interactions in caspase inhibition and spindle assembly. [LOAD_bir|3661]

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BLAST

Reference sequence project

LocusLink

Clusters of orthologous groups

Protein reviews on the web

**1: AAL30369**testis-specific inhibitor of apoptosis [Homo sapiens]
gi|16902898|gb|AAL30369.1|AF420440_1[16902898]

BLink, Domains, Links

**2: NP_203127**baculoviral IAP repeat-containing 8; IAP-like protein 2 [Homo sapiens]
gi|16974128|ref|NP_203127.2|[16974128]

BLink, Domains, Links

**3: Q96P09**Baculoviral IAP repeat-containing protein 8 (Inhibitor of apoptosis-like protein 2) (IAP-like protein 2) (ILP-2)
(Testis-specific inhibitor of apoptosis)
gi|21759009|sp|Q96P09|BIR8_HUMAN[21759009]

BLink, Domains, Links

**4: AAE55420**Sequence 4 from patent US 6159709
gi|14105805|gb|AAE55420.1|pat|US|6159709|4[14105805]

BLink, Links

**5: AAE57231**Sequence 4 from patent US 6171821
gi|14110691|gb|AAE57231.1|pat|US|6171821|4[14110691]

BLink, Links

**6: AAO31297**Sequence 2 from patent US 6331412
gi|28075569|gb|AAO31297.1|pat|US|6331412|2[28075569]

BLink, Links

**7: CAD26707**unnamed protein product [Homo sapiens]
gi|19168942|emb|CAD26707.1|[19168942]

BLink, Links

**8: CAC37714**unnamed protein product [Homo sapiens]
gi|13921166|emb|CAC37714.1|[13921166]

BLink, Links

**9: AAK81892**IAP-like protein 2 [Homo sapiens]
gi|15042064|gb|AAK81892.1|AF164682_1[15042064]

BLink, Domains, Links

**10: AAK49776**IAP-like protein 2 [Pan troglodytes]
gi|14522827|gb|AAK49776.1|[14522827]

BLink, Domains, Links

**11: Q95M72**Baculoviral IAP repeat-containing protein 8 (Inhibitor of apoptosis-like protein 2) (IAP-like protein 2) (ILP-2)
gi|21759007|sp|Q95M72|BIR8_PANTR[21759007]

BLink, Domains, Links

**12: CAC37715**

unnamed protein product [Pan troglodytes]

BLink, Links